Addressing alcohol in routine healthcare in Sweden – population-based surveys in 2010 and 2017

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Abstract

Aim: The aim of the study was to compare how alcohol was addressed in routine healthcare practice in Sweden in 2010 and 2017, following the 2011 implementation of national drinking guidelines.

Methods: Population-based cross-sectional surveys were conducted in 2010 and in 2017. Subjects were 3200 respondents in 2010 (response rate 54%) and 3000 respondents in 2017 (response rate 51%) in Sweden. Both the 2010 and 2017 surveys collected data on: socio-demographics; alcohol consumption; healthcare visits in the past 12 months; and characteristics of alcohol conversations in healthcare (duration, contents, experience and effects).

Results: It was significantly more likely that respondents had a conversation about alcohol in healthcare in 2017 than in 2010 (OR=1.49; 95% CI=1.27–1.75; p<.001). Conversations about alcohol in the healthcare were mostly short (< 4 minutes), both in 2010 and 2017. The alcohol conversations in 2017 included less information about alcohol's influence on health (p=0.002) compared to 2010. The experience of the conversation about alcohol was perceived as less dramatic in 2017 than in 2010 (p=0.038).

Conclusions: The results suggest that conversations about alcohol were more embedded in routine healthcare practice in Sweden in 2017 than in 2010. This development has occurred since the 2011 publication of the national guidelines. Alcohol conversations targeted also specific groups of drinkers as recommended by the guidelines. However, our study design does not allow for conclusions about the relationship between the guidelines and the changes in healthcare practice.

Keywords: Alcohol; brief intervention; implementation; healthcare; prevention

Introduction

Research on brief alcohol interventions to address hazardous and harmful drinking has been undertaken since the late 1970s (1). During this time, substantial evidence has accumulated for the effectiveness of such interventions to reduce hazardous and harmful drinking (2). Screening and brief intervention is a secondary prevention approach, defined by the World Health Organization (WHO) as "practices that aim to identify a real or potential alcohol problem and motivate an individual to do something about it" ((3); p. 6). Despite the robust evidence base, widespread implementation of brief alcohol interventions has not occurred, with their delivery remaining suboptimal in routine primary care and other health settings (4).

As in other parts of the world (5, 6), Sweden has seen the introduction of a series of government-sponsored initiatives over the past decade in order to address this evidence to practice gap. Responding in particular to increased levels of alcohol consumption after Sweden's entry into the European Union in 1995 (7), the six-year Risk Drinking Project was launched in 2004 with the aim of strengthening the secondary prevention of alcohol-related harm in healthcare (8). The project included extensive continuing professional education for healthcare professionals in primary healthcare, occupational care, child healthcare, and antenatal care, including screening and brief intervention techniques. More recently, Sweden continued the heightened focus on secondary alcohol prevention with the publication of the national drinking guidelines in 2011 (9). These guidelines were intended to provide guidance for healthcare professionals on when and how to address patients' lifestyle issues, including alcohol consumption. Delivering brief alcohol interventions for adults with hazardous drinking patterns was given a medium to high priority, while more extensive counselling was given a lower priority since it was argued that the effects did not exceed that of a brief

intervention (9). Pregnant women, parents of small children (age not specified) and people with planned surgery were prioritised over general adult drinkers.

Since 2011, epidemiological evidence suggests that there has been a decline in the total alcohol consumption in Sweden (7). Our 2010 population-based survey (10) found that two-thirds of the study population had visited healthcare in the past 12 months and one-fifth of these had had one or more conversations about alcohol. When healthcare professionals gave brief advice to reduce alcohol consumption, greater effects were observed when the advice was longer and included advice on how to achieve reduction. However, there is limited understanding of the impact of recent policy changes on the delivery of alcohol prevention in Swedish healthcare. Important questions also remain concerning the duration, contents and impact of alcohol-related consultations when delivered in routine healthcare practice. Previous research from Finland (11) and Sweden (10) has investigated these issues to some extent, but the only previous study that we are aware of that has examined the patient-perceived effects of routine healthcare alcohol conversations was the aforementioned Swedish study (10). Addressing these knowledge gaps is potentially highly important information for healthcare providers and policymakers alike.

The aim of this study, therefore, was to compare how alcohol was addressed in routine practice in Sweden before (2010) and after (2017) the introduction of the national drinking guidelines. More specifically, the study investigated the extent to which alcohol was addressed in patient conversations in routine healthcare in Sweden and the duration, contents, experiences and effects of such conversations about alcohol at both timepoints.

Methods

Study setting

The study was carried out in Sweden. Healthcare in Sweden is mainly publicly funded, although private healthcare also exists. All residents are insured by the state, with equal access for the entire population. The provision of healthcare services is primarily the responsibility of the 21 county councils throughout Sweden, financed predominantly through taxes levied by local government. Out-of-pocket fees are low and regulated by law.

Study population and design

Two cross-sectional surveys were performed in 2010 and 2017. The 2010 survey used a representative sample of 5981 adults aged 18–64 years (administered by Statistics Sweden) (10). Recruitment for the 2017 survey was based on a web panel administered by EnkätFabriken, a company which specializes in survey research. The web panel consisted of a sample of 5900 individuals, which was representative of the age, sex and region of residence of the Swedish adult population aged 18-64 years.

Data collection

Data for 2010 were collected by means of a mail questionnaire sent in January 2010 to the sample of 5981 individuals (10). The response rate was 54% (n=3200 respondents). Comparison with national 2010 population data (Statistics Sweden, 2010) showed that there were relatively more women amongst survey respondents (54.9% versus 49.2%), and that the respondents were also relatively older. An extensive follow-up of non-responders was performed which showed no difference in drinking patterns between responders and non-responders (10).

The 2017 data were collected by means of an electronic questionnaire, which was distributed via a web panel in August-September 2017. Of the 5900 survey recipients, 489 individuals answered only the first background questions, three opened the survey but did not respond to any questions, and 2413 did not answer at all. Therefore, the study population consisted of the 3000 individuals who answered the complete survey questionnaire, yielding a response rate of 50.7%.

Questionnaire

The 2010 and 2017 questionnaire surveys collected data on the same variables: socio-demographics; alcohol consumption; healthcare visits in the past 12 months; and characteristics of alcohol conversations in healthcare (duration, contents, experience and effects).

Alcohol consumption was measured using the Alcohol Use Disorder Identification Test – Consumption (AUDIT-C), a validated three-item alcohol screening instrument adapted from the original AUDIT developed by the World Health Organization (3). AUDIT-C measures both the frequency and volume of alcohol consumption, as well as instances of intensive drinking (or heavy episodic drinking). We constructed four alcohol consumption categories on the basis of answers to the three AUDIT-C questions: abstainers; moderate drinkers; hazardous drinkers; and excessive drinkers. Abstainers answered that they did not drink in the past 12 months to the frequency of drinking question; moderate drinkers drank in the past 12 months, but did not reach the hazardous level. Hazardous drinking was defined as having a weekly consumption of >9 drinks but ≤ 18 drinks for women and >14 drinks but ≤ 28 drinks for men and/or engaging in heavy episodic drinking (HED, 4 drinks per occasion for women, 5 for men) monthly but not weekly. Excessive drinking was defined as having a weekly

consumption of >18 drinks for women and >28 drinks for men and/or engaging in HED weekly or more often. One Swedish standard drink equals 12 grams of pure alcohol.

Six variables concerning alcohol prevention in healthcare were used. A question about visits to healthcare in the past 12 months was answered with either “no”, “yes, once”, or “yes, more than once”. Respondents who answered “no” to this question did not reply to any further questions. The subsequent question concerned whether the respondent’s alcohol consumption had been the subject of conversations in healthcare in the past 12 months. Answers were “no”, “yes, once”, or “yes, more than once”. Respondents who replied that their alcohol consumption had not been addressed in healthcare did not answer any further questions.

The duration of alcohol conversation was measured with one question with the response options: less than one minute; one to four minutes; five to 10 minutes; more than 10 minutes. If the respondents reported more than one conversation, they were asked to assess the average duration. The contents of the alcohol conversation (or conversations) were assessed with five items to which the respondent answered “yes” or “no”: information about how alcohol affects health; questions concerning how much alcohol I drink; questions concerning whether I would like to cut down on my alcohol consumption; advice about how to cut down on my alcohol consumption; and written information about alcohol. Perceptions of the alcohol conversation (or conversations) were assessed with four statements to which the respondent agreed on a four-item Likert scale, from “do not agree” to “agree completely”. The statements were as follows: “It provided valuable knowledge”; “It was informative”; “It was non-dramatic”; and “It was embarrassing”. Effects of the alcohol conversation were also assessed with six statements to which the respondents agreed on a four-item Likert scale, from “do not agree” to “agree completely”. The statements were as follows: “It had no effect at all”; “It

made me consider my alcohol consumption"; "I got a better understanding of the health risks of alcohol"; "I increased my drinking"; "I reduced my drinking"; and "I started thinking about a relative's/friend's drinking".

Statistical methods

Descriptive statistics are presented as frequencies. Bivariate associations were explored between categorical variables by using chi-squared test or Fisher's exact test. Logistic regression analysis was performed to examine associations between having had a conversation about alcohol in healthcare in the past 12 months in relation to age, gender, educational level, occupation, marital status, drinking categories, number of healthcare visits in the past 12 months, and time of survey. Interactions between time and the determinants were tested by the logistic regression analysis using the likelihood ratio test. Logistic regression models were calculated separately for 2010 and 2017. Odds Ratios (OR) of having had a conversation in healthcare were estimated with 95% confidence intervals (CI). Data were analyzed using the statistical software SPSS 24 and Stata 15.1. A level of 5% was considered to be statistically significant.

Ethical aspects

The study was approved by the Swedish National Data Inspection Board and the Local Committee for Research Ethics (ID 0498/001).

Results

The 2010 and 2017 surveys yielded similar response rates, 54% in 2010 and 51% in 2017. Table 1 provides descriptive statistics of the respondents' sociodemographic and drinking characteristics by study year. There was a difference in all sociodemographic characteristics

between the two time points, with more women respondents in 2010 than in 2017 (p<.001), more young respondents (p<.001), and higher levels of education (p<.001). There was also a difference in drinking habits between the two time points (p=0.029), with a slightly larger proportion of moderate drinkers in 2017 than in 2010. There was a similar proportion of respondents (65.8% in 2010, and 68.1% in 2017; p=0.132) that reported having visited healthcare in the last 12 months. Amongst those who had visited healthcare in the last 12 months, 19.4% (2010) and 26.3% (2017) reported having had at least one alcohol conversation.

Table 2 shows data concerning alcohol conversations in healthcare at both time points. Conversations about alcohol in healthcare were mostly short (< 4 minutes), both in 2010 and in 2017. There was a shift in the content of the conversation about alcohol in healthcare in 2017 compared to 2010. Respondents reported less information about alcohol's influence on health (p=0.002) in 2017 than in 2010. The experience of the conversation about alcohol was also perceived as less dramatic in 2017 than in 2010 (p=0.038).

Table 3 presents data concerning alcohol conversations in 2017 for the four drinking categories. In 2017 the duration of conversation about alcohol was associated with the patient's drinking status, with longer conversations reported by risky drinkers (p<.001). Risky drinkers also had more conversations about their willingness to reduce alcohol consumption (p<.001) and about how to reduce their consumption (p<.001). Excessive drinkers perceived the conversation about alcohol to be more dramatic than those in other drinking categories (p=0.031). The effect of alcohol conversation was associated with drinking status, with risky drinkers being more likely to report that the conversations made them consider their drinking (p=0.001), and less likely to report that the conversation had no effect at all (p<.001).

A test of interaction between the different determinants and time was performed, but the result was not statistically significant (p=0.46). Therefore, all subsequent analyses were presented for the pooled data set. The results of the multivariate adjusted logistic regression model in the pooled data set are presented in Table 4. Women had lower odds ratio of having had a conversation in healthcare compared to men (OR=0.83; 95%CI=(0.71-0.98), p=0.03). Individuals on parental leave were more than four times more likely to have a discussion about alcohol compared to those in employment (OR=4.49; 95%CI=(3.07-6.57), p<.001). Excessive drinkers had an almost two times higher odds ratio of having had a conversation in healthcare compared to abstainers (OR=1.94; 95%CI=(1.33-2.83), p=0.001). The odds ratio of having had an alcohol conversation was higher among respondents who had made two or more visits to healthcare compared to those who only visited healthcare once (OR=2.34; 95%CI=(1.98-2.76), p<.001). The multivariate adjusted odds ratio of having a conversation about alcohol in healthcare was significantly higher in 2017 than in 2010 (OR=1.49; 95% CI=1.27-1.75; p<.001).

Discussion

This study has compared how alcohol was addressed in routine healthcare practice in Sweden before and after the introduction of the national drinking guidelines in 2011. We found that the prevalence of alcohol conversations reported by those who had visited healthcare in the past 12 months increased from 19.4% in 2010 to 26.3% in 2017. This suggests that Sweden's national drinking guidelines have had a positive impact on the implementation of alcohol prevention in healthcare.

An increased alcohol conversation is considered positive because it is patient-centered. It provides the patient the opportunity to reflect about his drinking and can change his behaviour. Our findings are consistent with those from a similar cross-sectional survey conducted in the county of Uppsala, Sweden's fourth largest city (12), which showed that the delivery of screening and provision of alcohol advice to primary care patients increased between 2008 and 2012. Screening rates in the Uppsala study were higher than detected in our study. However, given the nationally representative sample reported here, and the longer period covered by the question on healthcare visits (12 months compared to three months for the Uppsala study), this difference could be due to geographical variation and/or recall bias (13, 14). The challenges of implementing brief alcohol interventions in healthcare are well-documented (11, 15-17), but this evidence suggests that alcohol prevention is becoming more embedded in healthcare over time in Sweden.

Similarly to 2010 (10), individuals on parental leave were significantly more likely than other respondent categories to have had an alcohol conversation in healthcare in 2017. This is consistent with the fact that parents of small children are prioritized for advice provision in the national guidelines (9). Further, alcohol screening and conversation is an integrated part of standard Swedish antenatal care, with about 85% of pregnant women (18) and a large proportion of partners to pregnant women (19) being screened with the AUDIT questionnaire at antenatal care visits.

Excessive risk drinkers had more alcohol conversations than those in other drinking categories and women had fewer conversations than men. Although some previous studies have not found an association between drinking status and likelihood of being screened (20) (13), our findings reflect other evidence from the UK (15) and Sweden (12) where significant

predictors of having an alcohol conversation have been male gender and risky drinking. As such, our results suggest that alcohol conversations in Swedish healthcare tend to target specific groups of drinkers, as recommended in the guidelines.

There was a shift in the content of the conversation about alcohol in healthcare between 2010 and 2017, with less focus on information about alcohol's influence on health in 2017. Further, alcohol conversations were perceived to be less dramatic in 2017 compared to 2010. Both in 2010 and 2017 alcohol conversations were mostly short (< 4 minutes), which is in line with the results of a Finnish study (11). More time was used for conversations with risky and excessive drinkers than those in the other drinking categories in 2017, which is consistent with both the 2010 study (10) and the previously mentioned study in Finland (11). The content of the conversations appears to have shifted somewhat, however; in 2017 there were more questions to patients about their alcohol use and less focus on providing personalised information related to health that might increase the motivation to change.

This study has limitations which must be considered when interpreting the findings. Both surveys used a cross-sectional design, which does not allow for causal inferences to be made between variables. Two different modes for recruitment of respondents in 2010 and 2017 were used, although response rates were similar. Given this study design, and the fact that all socio-demographic characteristics and alcohol consumption characteristics differed between the two time points, the observed increased likelihood of having had a conversation in healthcare could be due to differences in compositional characteristics of the study samples (and/or dropout samples). However, the differences between socio-demographic and alcohol characteristics were small (as shown in Tables 1 and 2), and due to the large sample size, even

a small difference (which may be of no clinical relevance) may be statistically significant (21).

At the same time, our study also has key strengths. Importantly, it provides information on the extent to which healthcare professionals deliver alcohol interventions from the viewpoint of patients themselves. As such, it addresses a critical knowledge gap in the alcohol prevention research field. Aside from the previously mentioned Swedish study (10), a repeated cross-sectional study of screening and brief intervention implementation in the county of Uppsala (12), and one population-based survey exploring the delivery of alcohol interventions in healthcare in England (22) have been conducted. There have also been smaller qualitative studies in the USA (23) and Finland (11). However, our study is the first to provide national data on alcohol prevention in the healthcare in Sweden in two repeated cross-sectional surveys, before and after the implementation of the national guidelines in 2011.

Conclusions

Conversations about alcohol have become more embedded in routine healthcare practice in Sweden during 2010 to 2017. This development has occurred since the publication of national guidelines to encourage healthcare professionals to address patients' lifestyle issues, including alcohol consumption. The content of alcohol conversations also shifted, with more questions asked about patients' alcohol use, and less focus on providing information on health. However, our study design does not allow for conclusions as to whether there is a causal relationship between the guidelines and the changes in healthcare practice.

Funding

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Conflicts of interest

None declared.

Keypoints:

- The prevalence of alcohol conversations reported by those who had visited healthcare in the past 12 months increased significantly between 2010 and 2017.
- The content of the conversations shifted with more questions to patients about their alcohol use in 2017 and less focus on providing information about alcohol's influence on health.
- Alcohol conversations in Swedish healthcare tend to target specific groups of drinkers such as pregnant women and excessive drinkers, as recommended in the national guidelines.
- Approximately 2/3 of the survey respondents visited healthcare at least one time in the last 12 months, offering the potential to influence the health of a large proportion of the population.

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Table 1: Sample characteristics

Variables	Time		p-value
	2010	2017	
Gender (n=6181)	3185	2996	
Man	1436 (45.1%)	1501 (50.1%)	<.001
Women	1749 (54.9%)	1495 (49.9%)	
Age (n=6133)	3133	3000	
<29 years	643 (20.5%)	851 (28.4%)	<.001
30-39 years	620 (19.8%)	604 (20.1%)	
40-49 years	728 (23.2%)	630 (21.0%)	
50-59 years	739 (23.6%)	591 (19.7%)	
60- years	403 (12.9%)	324 (10.8%)	
Education (n=6175)	3175	3000	<.001
Basic	444 (14.0%)	141 (4.7%)	
Secondary school	1549 (48.8%)	1392 (46.4%)	
University	1182 (37.2%)	1467 (48.9%)	
Occupation (n=6127)	3128	3000	
Employed	2171 (69.4%)	2227 (74.2%)	<.001
Student	341 (10.9%)	359 (12.0%)	
Unemployed	181 (5.8%)	98 (3.3%)	
Sick-listed	57 (1.8%)	82 (2.7%)	
Retired	147 (4.7%)	142 (4.7%)	
Parental leave	94 (3.0%)	77 (2.6%)	
Other	137 (4.4%)	14 (0.5%)	
Marital status (n=6176)	3176	3000	<.001
Married/living together	2167 (68.2%)	1897 (63.2%)	
Relationship but living apart	193 (6.1%)	190 (6.3%)	
Single	816 (25.7%)	913 (30.4%)	
Healthcare visits in the last 12 months (n=6141)	3141	3000	
2 or more visits	1143 (36.4%)	1113 (37.1%)	0.132
1 visit	923 (29.4%)	930 (31.0%)	
No visit	1075 (34.2%)	957 (31.9%)	
Conversation about alcohol in healthcare in the last 12 months (n=4146)	2103	2043	
2 or more conversations	80 (3.8%)	120 (5.9%)	<.001
1 conversation	329 (15.6%)	416 (20.4%)	
No conversation	1694 (80.6%)	1507 (73.8%)	
Drinking categories (n=6067)	3071	2996	0.029
Abstainers	318 (10.4%)	284 (9.5%)	
Moderate drinkers	1803 (58.7%)	1865 (62.2%)	
Hazardous drinkers	745 (24.3%)	647 (21.6%)	
Excessive drinkers	205 (6.7%)	200 (6.7%)	

Table 2: Characteristics of conversation about alcohol in healthcare

Variables	Time		p-value
	2010	2017	
Duration of conversation about alcohol (n=963)	427	536	0.047
<1 minute	274 (64.2%)	325 (60.6%)	
1-4 minutes	122 (28.6%)	159 (29.7%)	
5-10 minutes	18 (4.2%)	43 (8.0%)	
>10 minutes	13 (3.0%)	9 (1.7%)	
Contents of conversation about alcohol *(affirmative answers)*			
Information about alcohol's influence on health	143 (36.5%)	144 (26.9%)	0.002
Questions about my alcohol consumption	350 (83.9%)	471 (87.9%)	0.081
Questions re. my willingness to reduce consumption	48 (12.6%)	50 (9.3%)	0.111
Advice on how to reduce my consumption	23 (6.1%)	32 (6.0%)	0.951
Written information about alcohol	43 (11.0%)	43 (8.0%)	0.120
Experiences of conversation about alcohol *(agreed completely or to a large degree)*			
Provided valuable knowledge	100 (24.3%)	148 (27.6%)	0.255
Informative	124 (30.2%)	169 (31.5%)	0.672
Non-dramatic	364 (87.3%)	490 (91.4%)	0.038
Irritating	16 (3.9%)	32 (6.0%)	0.153
Effects of conversation about alcohol *(agreed completely or to a large degree)*			
Had no effect at all	279 (66.1%)	378 (70.5%)	0.144
Made me consider my drinking	45 (10.9%)	51 (9.5%)	0.469
Gave me a better under-standing of alcohol's health risks	58 (14.1%)	65 (12.1%)	0.360
Led to increase in my drinking	8 (2.0%)	15 (2.8%)	0.405
Led to reduction of my drinking	50 (12.2%)	50 (9.3%)	0.152
Made me think about a friend's drinking	54 (13.2%)	66 (12.3%)	0.695

Table 3: Characteristics of conversation about alcohol in healthcare vs risky drinking (For 2010 see Addiction 2011)

Variables	Abstainers n (%)	Moderate drinkers n (%)	Hazardous drinkers n (%)	Excessive drinkers n (%)	Total n (%)	p-value
Healthcare visits in the past 12 months (n=2996)						
2 or more visits	122 (43.0)	694 (37.2%)	224 (34.6)	71 (35.5)	1111 (37.1)	0.149
1 visit	88 (31.0)	582 (31.2)	202 (31.2))	57 (28.5)	929 (31.0)	
No visit	74 (26.1)	589 (31.6)	221 (34.2)	72 (36.0)	956 (32.0)	
Conversation about alcohol in healthcare in the past 12 months (n=2040)						
2 or more conversations	16 (7.6)	63 (4.9)	31 (7.3)	9 (7.0)	119 (5.8)	0.363
1 conversation	40 (19.0)	260 (20.4)	84 (19.7)	31 (24.2)	415 (20.3)	
No conversation	154 (73.3)	953 (74.7)	311 (73.0)	88 (68.8)	1506 (73.8)	
Duration of conversation about alcohol (n=)						
<1 minute	45 (80.4)	207 (64.1)	54 (47.0)	18 (45.0)	324 (60.7)	<.001
1-4 minutes	7 (12.5)	94 (29.1)	44 (38.3)	14 (35.0)	159 (29.8)	
5-10 minutes	4 (7.1)	18 (5.6)	13 (11.3)	7 (17.5)	42 (7.9)	
>10 minutes	0 (0.0%)	4 (1.2)	4 (3.5)	1 (2.5)	9 (1.7)	
Contents of conversation about alcohol (use dichotomized variables) *(affirmative answers)*						
Information about alcohol's influence on health	12 (21.4)	80 (24.8)	39 (33.9)	12 (30.0)	143 (26.8)	0.197
Questions about my alcohol consumption	49 (87.5)	290 (89.8)	97 (84.3)	33 (82.5)	469 (87.8)	0.317
Questions re. my willingness to reduce consumption	0 (0.0)	22 (6.8)	16 (13.9)	12 (30.0)	50 (9.4)	<.001
Advice on how to reduce my consumption	0 (0.0)	12 (3.7)	12 (10.4)	8 (20.0)	32 (6.0)	<.001
Written information about alcohol	3 (5.4)	25 (7.7)	10 (8.7)	5 (12.5)	43 (8.1)	0.631
Experiences of conversation about alcohol *(agreed completely or to a large degree)*						
Provided valuable knowledge	18 (32.1%)	87 (26.9%)	29 (25.2%)	13 (32.5%)	147 (27.5%)	0.692
Informative	22 (39.3%)	99 (30.7%)	34 (29.6%)	13 (32.5%)	168 (31.5%)	0.593
Non-dramatic	51 (91.1%)	302 (93.5%)	103 (89.6%)	32 (80.0%)	488 (91.4%)	0.031
Irritating	4 (7.1%)	15 (4.6%)	10 (8.7%)	3 (7.5%)	32 (6.0%)	0.419
Effects of conversation about alcohol						

(agreed completely or to a large degree)						
Had no effect at all	44 (78.6%)	242 (74.9%)	73 (63.5%)	19 (47.5%)	378 (70.8%)	<.001
Made me consider my drinking	2 (3.6%)	22 (6.8%)	19 (16.5%)	8 (20.0%)	51 (9.6%)	0.001
Gave me a better under-standing of alcohol's health risks	6 (10.7%)	34 (10.5%)	17 (14.8%)	8 (20.0%)	65 (12.2%)	0.266
Led to increase in my drinking	1 (1.8%)	6 (1.9%)	7 (6.1%)	1 (2.5%)	15 (2.8%)	0.120
Led to reduction of my drinking	5 (8.9%)	24 (7.4%)	13 (11.3%)	8 (20.0%)	50 (9.4%)	0.064
Made me think about a friend's drinking	8 (14.3%)	37 (11.5%)	15 (13.0%)	6 (15.0%)	66 (12.4%)	0.863

Table 4: Logistic regression of having had a conversation about alcohol in healthcare in the past 12 months in function of determinants by study wave (2010 and 2017) and for the pooled data, among respondents who had visited the healthcare in the past 12 months

Variables	2010				2017				Pooled model (2010 and 2017)			
	N	OR[a]	95%CI	p-value	N	OR[a]	95%CI	p-value	N	OR[a]	95%CI	p-value
Gender												
Male	800	1			928	1			1728	1		
Female	1110	0.77	(0.60-0.99)	0.04	1112	0.86	(0.70-1.07)	0.18	2222	0.83	(0.71-0.98)	0.03
Age												
18-29 years	381	1			542	1			923	1		
30-39 years	399	1.10	(0.73-1.65)	0.64	418	1.06	(0.76-1.46)	0.74	817	1.12	(0.87-1.44)	0.39
40-49 years	431	0.66	(0.43-1.02)	0.06	422	0.95	(0.68-1.33)	0.76	853	0.84	(0.64-1.09)	0.19
50-59 years	446	0.78	(0.51-1.20)	0.27	415	0.98	(0.70-1.38)	0.90	861	0.92	(0.71-1.20)	0.53
60- years	253	0.72	(0.43-1.19)	0.20	243	1.32	(0.88-1.98)	0.19	496	1.03	(0.76–1.41)	0.84
Education												
Basic	243	1			106	1			349	1		
Secondary school	913	1.21	(0.81-1.81)	0.36	943	1.17	(0.72-1.91)	0.53	1856	1.22	(0.89-1.66)	0.21
University	754	1.34	(0.88-2.05)	0.17	991	1.13	(0.69-1.85)	0.64	1745	1.24	(0.91-1.70)	0.18
Occupation												
Employed	1310	1			1470	1			2780	1		
Student	200	1.09	(0.69-1.73)	0.71	230	1.21	(0.83-1.77)	0.33	430	1.17	(0.87-1.56)	0.30
Unemployed	102	1.25	(0.75-2.10)	0.39	71	1.40	(0.83-2.36)	0.21	173	1.33	(0.92-1.91)	0.13
Sick-listed	42	1.44	(0.67-3.13)	0.35	79	1.31	(0.80-2.16)	0.28	121	1.39	(0.91-2.10)	0.12
Retired	92	1.55	(0.88-2.74)	0.13	116	0.97	(0.60-1.58)	0.91	208	1.18	(0.82-1.70)	0.37
Parental leave	78	6.01	(3.47-10.39)	<.001	66	3.17	(1.85-5.44)	<.001	144	4.49	(3.07-6.57)	<.001
Other	86	0.86	(0.45-1.63)	0.64	8	0.34	(0.04-2.84)	0.32	94	0.73	(0.40-1.33)	0.30
Marital status												
Married/living together	1319	1			1294	1			2613	1		
Relationship but living apart	127	0.75	(0.45-1.27)	0.29	133	0.98	(0.64-1.50)	0.93	260	0.89	(0.64-1.24)	0.49
Single	464	0.78	(0.57-1.06)	0.12	613	0.98	(0.77-1.24)	0.86	1077	0.90	(0.75-1.09)	0.29
Drinking categories												
Abstainers	188	1			210	1			398	1		

Moderate drinkers	1137	1.14	(0.74-1.75)	0.56	1276	1.09	(0.77-1.55)	0.63	2413	1.12	(0.85-1.47)	0.42
Hazardous drinkers	461	1.35	(0.84-2.16)	0.22	426	1.23	(0.82-1.83)	0.32	887	1.28	(0.95-1.74)	0.11
Excessive drinkers	124	2.70	(1.53-4.76)	0.001	128	1.43	(0.86-2.38)	0.17	252	1.94	(1.33-2.83)	0.001
Healthcare visits in the past 12 months												
1 visit	857	1			929	1			1786	1		
2 or more visits	1053	2.08	(1.61-2.69)	<.001	1111	2.50	(2.01-3.10)	<.001	2164	2.34	(1.98-2.76)	<.001
Time of survey												
I (2010)									1910	1		
II (2017)									2040	1.49	(1.27-1.75)	<.001

Abbreviations: OR = odds ratio; CI = confidence interval. [a]ORs are adjusted for age, sex, educational level, occupation, marital status, drinking categories, and healthcare visits in the past 12 months.